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STATUS OF ENVIRONMENTAL PROTECTION LEGISLATION IN THE ESCAP REGION

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I. GENERAL

A. Scope of paper

1. Responding to the decision taken at the thirty-second session of ESCAP, the ESCAP secretariat has convened an Intergovernmental Meeting on Environmental Protection Legislation in 1978. In preparation for such a meeting, the ESCAP secretariat in co-operation with UNEP organized an Expert Group Meeting and also took the initiative of sending out a questionnaire to the concerned Governments soliciting therein information relating to environmental protection legislation. Australia, Bangladesh, Cook Islands, Fiji, India, Indonesia, Nauru, Pakistan, Papua New Guinea, Philippines, Singapore, Sri Lanka, Trust Territory of Pacific Islands, Tuvalu and USSR responded to the questionnaire.[1/] Additionally, information on environmental protection legislation in Iran, Malaysia and Thailand was available in studies done on those countries by the United Nations Task Force on Human Environment.

2. Based on a review of these materials, a draft report on the status of environmental protection legislation in the ESCAP Region was prepared which was reviewed by the ESCAP/UNEP Expert Group Meeting on Environmental Protection Legislation held in Bangkok from 13-17 December 1977. Comments made at that Meeting are incorporated in this final report. Use has also been made of the papers presented at the Expert Group Meeting. Also incorporated in this report are the replies to the questionnaire sent by Afghanistan, Hong Kong and New Zealand received subsequent to the preparation of the draft Status Report. Finally visits by the Consultant to Australia, Hong Kong, Indonesia, Japan, Nepal, New Zealand, Papua New Guinea and the Republic of Korea in February-March 1978 facilitated new additional information about environmental legislations there.

3. This Report presents an overview of the status of environmental protection legislation in the ESCAP region and in particular, deals with the laws of 24 countries areas.[2/] The opportunity will also be taken to comment on the kind of services and leadership that an organization such as ESCAP could continue to provide to promote and foster qualitatively appropriate environmental regimes in the region.

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1/ The questionnaire and the country reports have been compiled into one document by the ESCAP secretariat.

2/ Afghanistan, Australia, Bangladesh, Cook Islands, Fiji, Hong Kong, India, Iran, Indonesia, Japan, Malaysia, Nauru, Nepal, New Zealand, Pakistan, Papua New Guinea, Philippines, Republic of Korea, Singapore, Sri Lanka, Thailand, Trust Territory of Pacific Islands, Tuvalu and the USSR.

B. Regional diversity

4. ESCAP covers 33 Member Governments and eight Associate Member Governments. Given even the conglomerate composition of most regional organizations, the diversity of the ESCAP region is almost unique. Its members include the populous China as well as Nauru which has a mere 8,000 inhabitants. Some members have a predominantly industrial economy (Japan) while industry may totally be alien to another (Tuvalu). Australia has wide expanses of space while the entire territory of Nauru spreads over 8 square miles. Singapore is at the hub of international maritime commerce but Afghanistan has no coast. Bangladesh has one of the highest population/territory density ratios, yet substantial areas of Papua New Guinea were not extensively explored until the 1960s. Motor vehicle traffic presents acute pollution hazards in some cities such as Bangkok in the region but one associate member has only a dozen motor vehicles in its capital. Indonesia could be said to have a broad variety of wildlife that may be in need of protection but the only animal wildlife found in Tuvalu are rats.

5. The historical and governmental patterns - ancient monarchies, former colonies, present trust territories, federations, unitary governments, republics and martial law-administered countries - with their differently complex legal heritages - add further diversity to the ESCAP landscape.

6. Such wide differences in population, territories, development, history and government defy traditional classifications (e.g., legal: common law or civil law; economy: industrial or agricultural; wealth: developed or developing) of the ESCAP region, and it would be well if this aspect is appropriately considered in any attempt for integrated environmental protection legislation in the region.

C. Conditioning factors regarding environmental protection legislation in the ESCAP region

7. The diversity notwithstanding, the country responses highlight, fortunately, a common awareness at the governmental level of the importance of environmental protection legislation. Because such a need had materialized earlier, some countries already show a reasonably

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adequate legislative framework for environmental protection. But even those countries appear to acknowledge a new importance and urgency for modifications in this framework necessitated by newly discovered techniques and concepts. In countries where the impact of industrialization and modernization is being felt for the first time, legislation has been enacted or is in the process of being enacted, all flowing from a new consciousness of the need for environmental quality.

8. Yet well-intentioned legislation by itself cannot change the harsh spectre of the threatened pollution and contamination of the region's environment. An equally important commitment should be to the aspect of effectively implementing such legislation. Here, the record does not appear as bright. Country reports repeatedly indicate ineffectiveness in this area caused by several factors including:

(a) Rampant poverty, in most cases linked with rising populations;

(b) Lack of funds;

(c) Lack of manpower including technical expertise;

(d) Lack of laboratories and monitoring/testing equipment and similar technical facilities;

(e) Illiteracy of the peoples and a general lack of environmental concern and awareness.

It would seem that environmental protection would remain an elusive goal in most of the ESCAP member countries unless a concerted attempt is made to improve the setting appropriately in which relevant legislation is sought to be enforced.

9. Another factor that has significantly conditioned the development of regulatory regimes in the region has been, as one would expect, the needs of a particular society. The limited availability of land space coupled with massive industrialization in Japan has induced elaborate solid-waste disposal arrangements. In Australia, however, this problem appears to be dealt with routinely by state and local governments. Similarly, Singapore has legislated extensively in the area of marine

/pollution.

pollution. The relevant expertise being developed by some countries in specified areas can be of benefit on an ad hoc basis when another country feels the need for legislation in such an area.

10. Attention must also be alerted to the fact that even when a particular country does not have legislation in a specific area, it contends that it still gives consideration to environmental factors as a "policy matter" when taking pertinent decisions. Thus the absence of legislation may not always be indicative of lack of environmental concern.

II. CONCLUSIONS AND RECOMMENDATIONS

Conclusions

11. It is suggested that the diversity in the political, legal and environmental settings of most countries does not generally recommend the drafting of general or "subject" model environmental protection legislation for regional countries. It is, instead, felt that a more critical need is to create an awareness of the importance of environmental control and thereby first "legitimize" this subject. Equally vital is the requirement to develop the facilities (funds, laboratories, equipment) and the expertise (qualified technical staff and other supporting manpower) to sustain a sophisticated environmental regulatory framework. Unless consciousness about environmental matters and the ability to institutionalize its regulation successfully precede, or at least accompany, detailed environmental protection legislation, such legislation may serve no useful purpose. In fact the lack of ability to enforce such legislation will have promoted, in its continued breach, an undesirable disrespect towards an important State policy.

12. Those countries which have achieved the indicated "take off" point for environmental protection legislation can share the experiences of a particular country or countries with similar problems. Here again the approach is one of an ad hoc character and not that of "model" environmental protection legislation. Thus if country "A" has had an extensive experience in say marine pollution, such experience should be readily sought by country "B" which is proposing new marine pollution

/legislation.

legislation. ESCAP could play an important role in acting as a nucleus and disseminator of such knowledge.

13. There is yet another consideration against suggesting model "subject" legislation for the region. Many countries may not even have problems covered by such subject legislation. Thus, solid-waste disposal may be a pressing environmental problem in an industrialized country, particularly with limited land space, but a country without industrial pressures or with massive unutilized open spaces may not have the same degree of need, if any, for specific legislation in this field. Law responds to a need and generally follows it. Legislation on an anticipated need, particularly when such anticipation is unrealistic, could hardly be an appropriate area of regional concern.

14. Finally, the federal character of many governments in the region with their built-in "federal subject" and "state subject" dichotomies and other constitutional peculiarities would reduce the effectiveness of the "model" approach. It would be too much to expect that such a model could accommodate the several unique features established by each national constitutional system.

Recommendations

15. This status report is interspered with the identification of some of the inadequacies in environmental protection legislation in the region and with recommendations to meet the contemporary challenges of development. These need not be repeated.

16. It has been possible for the first time to review collectively the environmental legislation of so many ESCAP members. This task has been facilitated in no small measure by the comprehensiveness of the ESCAP questionnaire and the opportunity afforded to the Consultant to travel to several countries in the region. It may be useful to update this study every two years.

17. It is recommended that ESCAP should retain the pioneering initiative taken by it in this matter and continue to request members to send information relating to environmental protection legislation, with copies

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of the specific legislation. This store-house of information could be readily made available to a member that sought guidance and expertise.

18. Member Governments, on their part, should intensify their efforts towards disseminating environmental awareness among their peoples. Appropriate modifications of school and university syllabi may, as a starting point, be considered. The potential of radio and television in educating the illiterate masses also needs to be examined. Attention is drawn to the commendable initiative taken by New Zealand in publishing a ready-reference Environmental Law Guide. This publication summarizes all the environmental legislation in the country, gives a useful subject index and notes the environmental cases decided by the courts. Japan's Environment Agency, too, has produced several publication on environmental laws and regulations in Japan. These publications undoubtedly make it easier for the common man first to understand and later seek to enforce his rights to a clean and healthy environment. Other countries would do well to emulate this lead.

19. Serious thought should also be given to treating this general report as a prelude to more comprehensive studies on environmental protection legislation in the region. The more important areas -- such as land use, water, marine and air pollution -- can each be initially taken up for an in depth analysis and involve an extended review of regional legislation. These studies can be provided to members thereby stimulating interest towards either new legislations or, some times, modifications in existing statutes. Depending on the success of these specific subject studies, the same could be done for the other topics covered by this report.

20. The Commission may further consider institutionalizing a body of experts and provide or recommend their services to Member Governments on an ad hoc basis. As problems are generally unique where they arise, these experts could finalize their recommendations after visiting the country and familiarizing themselves with its problems and resources. Such assistance could be general (the whole gamut of environmental protection) or specific (e.g., environmental impact legislation or a wildlife statute). Periodic meetings and seminars sponsored by ESCAP would give these experts the opportunity of exchanging information and thus remaining current with the region's priorities.

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21. Within its members, ESCAP may consider giving priority to the following:

(a) Assistance in the development of trained manpower and supporting infrastructure to facilitate effective implementation of environmental protection legislation;

(b) Assistance in educating the masses about the significance of environmental quality on the rationale that a vigilant citizenry can be an important watchdog of environmental protection;

(c) Assistance, particularly, in developing environmental law courses in law schools. Detailed proposals for this have already been made by the United Nations. Task Force on Human Environment.

22. The importance of the subject can perhaps be highlighted by the adoption at the Inter-Ministerial Meeting in July 1978 of a "Bangkok Declaration" - a declaration whereby Member States reaffirm the importance of environmental protection in the region and undertake to express such importance by a renewed commitment to legislating and implementing areas of environmental concern.

III. COUNTRY REPORTS

23. It is proposed to analyse the Country Reports with reference to the following important areas on which information was solicited by the questionnaire:

(a) Constitutional provisions;

(b) Institutional setting;

(c) Environmental legislation:

(i) Environmental impact analysis;
(ii) Land use;
(iii) Water pollution;
(iv) Marine pollution;
(v) Air pollution:

a. Stationary sources;
b. Mobile sources;

(vi) Noise;

/(vii)

(vii) Solid-waste management;

(viii) Coastal zone management

(ix) Forest conservation;

(x) Parks and wildlife;

(xi) Mineral development;

(xii) Pesticides, fertilizers, toxic substances and radioactive materials;

(xiii) Cultural environment.

A. Constitutional provisions

24. Only a few Constitutions in the region such as those of India, Indonesia and Papua New Guinea contain direct provisions on environmental protection. This may be because of one or more considerations. First, the Constitutions generally predate the new and emerging consciousness in this field. Secondly, in several countries, environmental matters are, even today, not considered relevant or important enough to premise a constitutional commitment. Thirdly, some countries may have found it inappropriate to express their otherwise dominant interest in this field in their Constitutions. Another reason could be the division of subjects between the federal government and the provinces/states in a federal constitution.

25. Constitutional provisions are no doubt helpful. They highlight a national priority and thereby influence future legislative policies and executive actions. Particularly in a federal system, they clarify the respective scope of federal and state action. In India, for example, the Directive Principles of Constitution (Article 48A) provide that the "State shall endeavour to protect and improve the environment and to safeguard the forests and wildlife of the country". The Indian Constitution, like that of Malaysia, Pakistan and Papua New Guinea, specifies "federal", "state" and "concurrent" lists and provides that the Federal Government can act on matters covered by the Federal list, the states on the state lists and both the Federal legislature and states on concurrent lists. It is also a common feature of these Constitutions that if a state law is inconsistent with a Federal law, the Federal law shall prevail and

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the state law shall, to the extent of the inconsistency, be void. Generally, Federal Constitutions also enable the Federal Government to legislate in all areas covered by an international agreement to which the Federation is a party even when such an area may be covered by the state list (e.g., Article 253 of the Indian Constitution).

26. Whether the Federal Government or the states can legislate or establish policies in matters relating to environmental protection would, then, to a large extent depend on the Federal, state and concurrent lists. Care must be taken to draw up these lists as ambiguity or silence may be a source of conflicting interpretation of the respective roles of the Federal Governments and state governments.3/

27. Irrespective of the extensive role that state governments play in a federal system in the management of land, agricultural and forestry, local government, water and air pollution, protection of wildlife and national parks - all areas of critical importance to environmental protection legislation - it would be well to consider conceding a functional primacy to the Federal Government in these areas. These areas could continue to be effectively managed by state governments but the Federal Government should have the option to lead and guide national policies in this regard. The Pakistan Constitution appears to provide such flexibility. It places "environmental pollution and ecology" on its concurrent list thereby acknowledging state management but subjecting it, importantly, to Federal primacy. In this way the management resources of the states can be fully utilized and, as and when necessary or appropriate, the Federal Government can establish policies and standards and implement them either through Federal or state agencies.

/B. Institutional

3/ The United Nations Task Force study on "Legal aspects of environmental management in Malaysia" highlights such problems of interpretation in the Malaysian Constitution.

B. Institutional setting

28. Several approaches have been adopted in the region to deal with environmental protection. The pendulum swings from those members who report that they have no pressing environmental problems and have, therefore, felt no need to institutionalize their solution to other members that have developed high-powered central agencies or ministries in response to the need, actual or potential, for resolving environmental issues. It is interesting, however, to notice the common trends in the evolutionary process towards institutionalising environmental protection.

29. Nauru with an 8 square mile territory and 8,000 population has no agency or statute dealing with environmental protection. Tuvalu also has no specific agency. Fiji finds environmental concern in its infancy and an innovation for the majority of its people. Th ese examples represent one extreme.

30. The traditional approach, however, has been for environmental-related issues to be routinely reviewed by several departments connected with resource development or conservation. In many cases, these departments do not have any statutory guidelines but they watchover environmental protoction as a "policy" matter. An outgrowth of this approach is the expected co-ordination, again in the absence of statutory imperatives, of these several departments. The next development is the designation of a specific committee/department among the ministeries to look after environmental issues. Subsequent requirements for specialized needs and skills have ultimately led to the creation of a full time environmental ministry, agency or board. At the last stage, a country may be generally said to have consummatively expressed its awareness of the importance of environmental protection.

31. In Federal systems there is the additional duality of Federal and state handling. In Australia, the Department of Environment, Housing and Community Development is responsible for environmental policies in those areas falling within the responsibility of the Australian Government while state departments and authorities are responsible for environmental matters at the state level. Co-ordination is achieved by councils of state and Australian ministers. India has a National Committee on Environment Protection and Co-ordination supplemented by corresponding committees/agencies

/at state

at state levels. These national "Departments" and "Committees" are institutionalized as an administrative measure and not having been created by statute with rule/regulation-making power, they may be handicapped in standard-setting and compliance. India, seemingly content with the policy co-ordination role of its National Committee, has, however, established statutory central and state boards in various sectors such as water quality.

32. Nepal and Sri Lanka are examples of the "several agencies" approach. Sri Lanka has no specific environmental agency but responds to environmental problems through the National Science Council and other ministerial agencies. Indications are that Sri Lanka is moving towards a central environmental authority. Nepal, similarly, may settle for central environmental co-ordination by its Man and Bio-sphere Committee, although it must be pointed out that such thinking is still in a fluid state.

33. The growing awareness in the region of the importance of integrated environmental protection is perhaps best reflected in much post-1970 legislation, involving the establishment of specific environmental agencies, that have been or are in the process of being adopted by members. In Cook Islands, the Conservation Act, 1975, established the Directorate of Conservation. Pakistan, currently reacting to environmental matters through several ministries (mainly the Environment and Urban Affairs Division of the Ministry of Housing and Works) is contemplating a high-powered national Environmental Protection Council and an Environmental Protection Agency pursuant to the proposed National Environmental Protection Act. In Iran, the Environmental Protection and Enhancement Act, 1974 established the Department of Environment with extensive regulatory authorities; it also established the Environmental High Council. Similarly, the National Environment Board of Thailand has been created under the Enhancement and Conservation of National Environmental Quality Act, 1975. The Environmental Quality Act, 1974, centralizes environmental functions, for Malaysia, in the Ministry of Science, Technology and Environment, the Director-General of Environmental Quality and the Environmental Quality Council. In the Trust Territory of Pacific Islands, the Environment

/Protection

Protection Board was given powers under the Environmental Quality Protection Act, 1972. Bangladesh has poineered with the Environment Pollution Control Ordinance, 1977, which sets forth, for the first time, a comprehensive national approach to pollution control.

34. Japan, over the years, has continually upgraded its interest in environmental matters. In 1964, it established the Environment Pollution Division in the Ministry of Health and Welfare. This Division was raised to the level of a Department in 1967. The Basic Law for Environmental Pollution Control, 1967, established an Inter-Ministerial Conference on Environmental Pollution Control, under the chairmanship of the Prime Minister, and high level advisory Central Council on Environmental Pollution Control. Important institutional headway was made in 1971 when the Environment Agency was established with the statutory mandate of "primary responsibility for ... promoting pollution control". This Agency is headed by a Minister of State and performs important functions in the administration and standard setting of environmental matters in Japan. Two other developments need to be noted which may have induced effective implementation. The first concerns the Law on the Settlement of Environmental Pollution Disputes, 1970, that institutionalizes conciliation, mediation and arbitration for dispute resolution. The second, the Pollution-related Health Damage Compensation Law, 1974, has provided a speedy and fair protection to the victims of pollution-related health damage.

35. Similarly, but more recently, the Republic of Korea upgraded the importance for environmental problems by creating in 1977 a Bureau of Environmental Affairs in the Ministry of Health and Social Affairs comprising an Air Pollution Division, a Water Pollution Division and an Environment Planning Division. Its Environment Preservation Law, 1977, provides for an Inter-Ministerial Environmental Preservation Committee, a high level advisory National Environmental Committee and an Environmental Dispute Mediation body.

36. A significant commitment to institution building has also been made by the Philippines. Here, until early 1977, environmental matters were dealt with by a multitude of governmental agencies. But on the signing of Presidential Decree No. 1121 on 18 April 1977, the National Environmental Protection Council was created with the President of the Philippines as Chairman. This Council has a mandate to act as the country's principal policy-making and co-ordinating body.

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37. The institutional involvement of the President directly in environmental policy of a country could be an important impetus to environment-oriented regulation. It would, therefore, be interesting to watch the Philippines experience. Initial indicators are that environmental legislation and policies have already received a boost by the direct involvement of the President. Reference can be made to the approval by him of two decrees - Philippine Environmental Policy Decree and the Philippine Environment Code - during the First National Conference on Environmental Management in July 1977. A noted national commentator has referred to these as "epochal" legislations.4/ If this momentum is sustained, other countries should consider similar high-level bodies. High-level participation ensures better receptivity in governmental corridors of power and policy-making. Pakistan is currently "escalating" the importance of environmental protection by having a federal minister as the chairman of the proposed Environmental Protection Council.

38. New Zealand and Singapore seem to accomplish this high-level approach by having Ministries of Environment. New Zealand has a central environmental secretariat in the Commission for Environment that was established in 1972 by a Cabinet decision and which supports the Ministry of Environment. This Commission also informally backs up the high level Environmental Protection Council which to comprised of governmental officials and private citizens. The majority representation of the public on this Council may perhaps have induced considerable activism of this Council.

39. Hong Kong, too, has recognized the importance of integrated environmental planning. The Secretary of Environment is responsible for the formulation of environmental policy. In response to the recommendation of consultants who recently undertook a comprehensive review of Hong Kong's environmental problems,5/ an Environmental

/Protection

4/ Amado S. Tolentino, Environmental Considerations in Planning Impact Assessment (1977).

5/ The consultants, after work spreading over two and a half years, have proposed to, and drafted for, Hong Kong five specific ordinances on water pollution, air pollution, noise pollution, solid waste disposal and environmental impact assessment. These drafts, incorporated in the consultants' final report submitted in September 1977, have been released to the public for comments.

Protection Unit was established in 1976 in the Environment Branch as a central pollution control agency. There is also an advisory body, the Advisory Committee on Environment Pollution (EPCOM) made up of government officials and representatives of the public.

40. It may be generalized that any effective environmental protection legislative framework must look to the institutional setting in which it is placed. Such institution(s) should ideally be self-contained and self-propellant; it should have its own momentum. The approach that perhaps recommends itself is one that would include the following:

(a) The establishment of a specific full time environmental agency (or board or committee);

(b) Such an agency should preferably be a statutory body and should, under the statute, have a national policy-making and co-ordination role;

(c) To provide the desired flexibility, the agency should have rule/regulation-making powers whereunder it could, for example, prescribe and continually modify pollution standards;

(d) The agency could implement the laws and its regulations through its personnel and in a Federal system or, in the face of financial and manpower constraints, through state agencies like State Forest Departments (forest rangers, game wardens) and State Health Departments (sanitary inspectors);

(e) The agency should be a high level one; the more prominent and high-ranking its head the more credibility it would enjoy.

The proposed agency could act as a catalyst for change. It could organize the skills, technology, facilities and manpower for effective implementation. It could also, at the national level, act as a disseminator of environmental awareness. The requirement added for it being full time is important and has been influenced by two considerations. One, it would ensure singleness of purpose and aviod conflict of interest

/situations.

situations. More importantly, with a unitary mandate, its survival as an institution would hinge on its "activism" thereby ensuring continued effectiveness. Experience would show that Parkinson's law in a varied form will be applicable in these circumstances: such an agency would likely pursue an aggressive standard-settingg and co-ordination policy to justify its existence and the higher budgetary allocations demanded by it. It will, in turn, find more and more avenues to spend the budgets thereby, it is to be hoped, serving environmental protection objectives.

41. It has also to be recognized that irrespective of the sophistication that the environmental legislative or institutional framework of any member country may accomplish, its efficancy would, in the final analysis, depend on the ability to implement such a framework adequately. Proper compliance is induced by public awareness of environmental issues and the importance that the community attaches to demanding appropriate living standards for itself. Public apathy on these issues would make governments less responsive to protecting the environmental quality whereas a vigilant citizenry would compel appropriate governmental action. The need is further felt for an army of professionals - such as administrators, scientists and lawyers - which can monitor and police compliance of environmental legislation. Without such support, governmental commitments in this field would be seriously handicapped.

42. The region's concern for improving this infrastructure, though, does not appear commensurate with its awareness of the importance of environmental protection. Only the Philippines and the USSR seem to require environmental education legally in schools. The school syllabi of many members comprise several disciplines that routinely include environmental matters but the needs of the region would be better served by a more specific commitment in this field. Perhaps, Indonesia could be cited as a model for the developing members of the region: it has launched a "Popular campaign for environmental awareness" and has geared its educational programmes accordingly. The effort in the Philippines is also noteworthy. Singapore appears equally aware of the need to heighten environmental awareness at all levels.

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43. A recommended approach is the development of the teaching of environment-related courses at law schools in the region. Lawyers so trained can provide the badly needed support to environmental agencies for the policing and implementation of environmental legislation. Only a handful of law schools in the region offer specific courses in environmental law. Australia, India, Indonesia and Japan appear to be the pioneers in this regard. Papua New Guinea proposes to establish an Environmental Law Chair but may settle, for the time being, for seeking a part time lecturer from Australia. In Thailand, the State Universities Bureau has agreed to establish a course in environmental law at Chulalongkorn University. In the meantime, experimental courses have been tried at Thammasat and Ramkamhaeng Universities. Arrangements have also been made to include environmental legislation in the syllabus of the law school in Bangladesh.

44. The United Nations Task Force on Human Environment has, happily drawn the attention of several Member Governments that it has visited to the need for educating and developing a cadre of indigenous attorneys as a necessary tool for environmental management. The recommendations of the United Nations Task Force in this regard deserve support in the entire region.

C. Environmental legislation

1. Environmental impact analysis

45. A necessary consequence of any national developmental effort is the modification of the environment. Agricultural expansion, the construction of industrial complexes, irrigation and power projects, highways and airports in one way or another usually affect the prevalent ecology - the industrial complexes may cause water or atmospheric pollution and the construction of a dam could not only submerge the wildlife in the newly created reservoir but also play havoc with the upstream mobility and breeding patterns of fish life. If all these factors are considered in time at the earlier planning stages, these environmental hazards could be sought to be minimised. Many times countries go ahead with projects without fully assessing their environmental impacts and later find that damage to society in the long run could have been avoided by timely consideration and remedial measures.

46. It would seem to follow that one of the most critical areas of concern in the region is the need fully to consider, at the planning stage, the impact on the environment of any particular programme or project. Remedial measures could then be considered and decided upon on a cost-benefit evaluation. In many cases it may be found that the costs for remedial measures at that stage are low and acceptable whereas if one is presented with a fait accompli, remedial measures may not be possible or are prohibitive in costs. Increasingly, regional Member Governments are accepting the fundamental premise that national development should not be wasteful and should not result in resource degradation; that their natural resources are to be utilized as a trust for future generations. This awareness needs to be implemented through a formal and legal approach that should require a comprehensive review of environmental impact before the approval of a project.

47. Yet, most of the members do not have any legal requirements for environmental impact analysis. Most of them, however, point out that even in the absence of any such statutory obligation, they conduct such an analysis for major government works or projects requiring some form of government authorization (New Zealand), for large scale development projects or governmental projects (Hong Kong) or as a "policy" matter (Bangladesh, Cook Islands, India, Indonesia, Pakistan, Singapore and Sri Lanka).[6/] What "policy", who determines it and the intensity of the application of the policy, all these are left vague in this approach. Such fluid status may lead to arbitrary and discriminatory decisions and will not induce integrated environmental management.

48. Instead, there is an urgent need for legally requiring an environmental impact analysis before the approval of projects. This method has been institutionalized by obligating the proponent of a project to submit an environmental impact statement (EIS) which generally seeks all environmental information related to the project. The EIS, which forces environmental thinking at the appropriate stage, is reviewed by governmental agencies and the project proponent is required to make modifications in the project, if deemed necessary, before the project approval is given.

/Australia,

6/ The impression gathered during a visit to Nepal was that its Planning Commission did not generally consider environmental factors in approving projects. There seemed, however, a growing feeling that not only should an environmental impact statment be required under law but that such a law should have strong public participation provisions.

Australia, Iran, Philippines and the Trust Territory of Pacific Islands have statutory requirements for the submission of EIS. In Australia, the Environment (Impact of Proposals) Act, 1974, covers all matters affecting the environment to a significant extent and involving the Australian Government. In addition, EIS requirements are imposed administratively by most states. Section 7 of the Environmental Protection and Enhancement Act, 1974, authorizes the Department of Environment in Iran to require EIS. In the Philippines, guidelines for the EIS are drawn up by the National Environmental Protection Council. EIS are required for certain projects - primarily United States funded - in the Trust Territory of Pacific Islands. In Japan, EIS are required for certain major public projects. EIS are also required by some ordinances of local government. A set of administrative guidelines for the EIS have recently been approved by the Cabinet and a new bill on environmental impact assessment in now under consideration.

49. The efficacy of environmental protection in the region would much depend on how those countries that do not today legally require EIS impose such a requirement in the near future. That this is likely to happen is perceptible from the 1970-decade vintage of the legislation already discussed. Papua New Guinea has already taken a step in that direction: its proposed Environment Planning Act requires EIS. Moreover, recent legislative provisions in some countries could be considered adequate for requiring the production of EIS-type information. Examples are Section 6 of Thailand's Enhancement and Conservation of National Environmental Quality Act, 1975, and Sections 11 and 20 of the Environmental Quality Act, 1974, of Malaysia. Indonesia has enabling legislation which could be used for requiring EIS-type information. Similarly, the Republic of Korea's recent Environment Preservation Law, 1977, is being interpreted to enable a Presidential Decree to require EIS. The matter of legally requiring and EIS as per the draft Environmental Impact Assessment Ordinance proposed by the consultants is under active consideration in Hong Kong.

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50. It must be cautioned, however, that in establishing environmental impact procedures, each country should be guided by its indigenous resources and peculiarities. The need to require certain types of data should, of course, be commensurate with the existing capabilities - technical or otherwise - available in the country. Looking at some of the proformas for EIS being used in some countries, one will find that in other countries project proponents may not have the ability or expertise to furnish much of that type of information. Similarly, while air quality information may be relevant in one country, in another country the requiring of such information may not be considered relevant enough for its environmental protection. The case then clearly is for an individualized rather than a standardized approach to EIS. However, a member venturing into this field could benefit to some extent by studying the approach of a country like the Philippines where this matter has been recently resolved.

51. Also deserving unique responses are other questions such as public participation in evaluating environmental hazards. In principle, it appears commendable on at least two counts to draw public discussion on the EIS and related matters. First, inasmuch as all environmental concern is geared to public welfare, those that are directly affected should be consulted. Secondly, the institutionalization of such public participation will educate public opinion and stimulate awareness. Yet there may be justification in certain cases to not involve the public. There may, for example, be an overriding aspect of confidentiality in certain projects and national security considerations might in those cases dictate exclusion of public participation. This need is acknowledged in the administrative procedures approved under the Environment (Impact of Proposals) Protection Act, 1974, of the Australian Government.

52. Another aspect regarding public participation that should be considered is the possibility of abuse of this practice. If private industry proponents, for example, are required to submit to a public scrutiny of their projects from an environmental standpoint, their competitors may utilize that opportunity to inspire flippant objections with a view to scuttling the project. These dangers would particularly breed in a country where environmental standards are subjective or quasi-subjective.

/2. Land use

2. Land use

53. Another area of vital contemporary interest in the region is land-use legislation. Without such legislation members are prone to condone unregulated development: in the absence of legislatively inspired criteria, industrial complexes could be located in or near residential areas, appropriate attention need not be given to the sitting of schools and other support-facilities near residential areas, and planning of large commercial buildings in busy cities may not include a comprehensive review of the motor traffic generation potential of the buildings. The result, of course, could be an uneconomic utilization of the available resources, an avoidable inconvenience to the community's members and sometimes an unnecessary hazard to their health.

54. It is justifiably felt that innumerable environmental-related problems can be taken care of at the planning stages with the help of appropriate legislation. Thus a legislative criteria for water and air pollution standards may induce the sitting of an industrial complex in a place other than the one proposed by the project proponent - the assimilative potential of a river at the relocated site may be more promising than at the original site. Other economic factors being equally applicable to both the sites, the interests of society would be better served by relocating the project.

55. The objective of a maximum utilization of resources could also be sought to be effectively met by the grouping together of industries in an industrial estate outside municipal limits of cities. This has several advantages: the estate can be services by a common infrastructure (railway for the transportation of goods, dispensaries and hospitals for workers) and the factory inspectors and other enforcement officials have an identified area to supervise.

56. The relationship of sewage, water, transport and similar amenities to public use is thus an important criterion in any land-use regulation. Such zoning requirements, if imposed by law, could give an orderly cohesion and sense of direction to the bursting development in some regional members.

57. Land-use regulation is being increasingly emphasized in the region. Most Member Governments have comprehensive legislation[7/] including zoning requirements. A noteworthy example is New Zealand's recently revised Town and

/Country

7/ The applicable legislation in the region is so numerous that individual items cannot be mentioned in this paper.

Country Planning Act. Zoning is also employed as a means of controlled land use in Singapore. In Hong Kong, the Town Planning Board is the highest planning authority which includes prominent public representatives. Japan has stressed the importance of land use by enacting a new law, the National Land Use Planning Act, and by establishing a high level Land Use Agency headed by a Minister of State. Fiji has incorporated land-use provisions in its Town Planning Act, Land Development Act, Land Conservation and Improvement Act and the Drainage Act.

58. Federations feature Federal laws for Federal Territories and various Planning Acts for the states (Australia, India, Malaysia and Pakistan).

59. Singapore's Planning Act requires that the Singapore Statutory Master Plan be reviewed at least once every five years. The Plan serves as a guide for policy makers, planners and developers in the country. The Philippines also appears to discipline its land-use regulations according to a National Comprehensive Land Use Plan. It has designated the Human Settlements Commission as well as other departments to carry out these functions. Iran has formulated a National Spatial Strategy Plan and follow up land-use legislation is needed to implement its priorities. Japan adopted the National Land Utilization Programme in 1976 which serves as a broad guideline for prefectural land development programmes. The Republic of Korea's Environment Preservation Law, 1977, concedes high priority to land-use regulation and supplements existing legislation on urban and agricultural land use. The USSR is yet another example of where there is integrated land-use planning in respect of both urban and rural areas.

60. Land-use decisions in Papua New Guinea are currently not based on comprehensive land-use plans. Such plans are indicated to be under preparation. However, the Town Planning Act, including zoning regulations, currently applies to the urban areas.

61. Indonesia is preparing a comprehensive land-use planning plan but currently dispenses action in this field under the Town Planning Ordinance and the Basic Laws on Agriculture, Mines and Forestry. It is similarly indicated that Nepal's Department of Soil and Water Conservation proposes

/comprehensive

comprehensive land-use legislation to supplement its existing but localized land-use laws. Sri Lanka has no established land-use planning process; its responses to the problems are on an ad hoc basis. As in Bangladesh and Pakistan, municipal corporations or statutory bodies in Sri Lanka handle various aspects of planning mostly in urban areas only. However, Sri Lanka's new Agricultural Productivity Law covers land-use in rural areas also.

62. The City Planning Act, 1975, pioneers the establishment in Thailand of a comprehensive planning procedure (including public hearings and review). Of similar importance is Malaysia's Town and Country Planning Act, 19[illegible].

63. The discernible patterns in the region may be summed up as follows:

(a) The need for over-all national and comprehensive land-use planning is gaining growing recognition;

(b) Recent land-use statutes in the region apply mostly to urban areas and extend opportunities for public participation in land-use decisions.

3. Water Pollution

64. The following five situations exist among regional members relative to water pollution:

(a) No legislation;

(b) The situation is covered by general statutes;

(c) There is specific water quality legislation and such legislation is being effectively implemented;

(d) There is specific water quality legislation but there are handicaps to its implementation;

(e) New proposed water quality legislation awaits formal enactment.

65. Cook Islands has no legislation on water quality. Tuvalu does not have any industry and therefore has found no need for water pollution legislation.

66. Fiji is non-industrial and its Sewerage Act, 1966, and the Water Supply Act, 1955, have adequately responded to its needs. The latter makes it an offence actively to cause pollution of water in a catchment area.

Sri Lanka has not indicated any specific water quality legislation. Bangladesh and Pakistan, although at the threshold of new regimes pursuant to proposed Ordinances, currently regulate their water quality through a series of general acts (e.g., Factories Acts) and provisions against nuisance in their penal laws. In Thailand, similarly, the authority for water pollution control is found in the Public Health Act, 1941, which empowers local authorities to regulate activities affecting public health and welfare and to abate "nuisances". Also, under the Factories Act, the Thai Ministry of Industries has extensive control over improper drainage. In Nepal, the Canals, Electricity and Related Water Resources Act and the Town Planning Implementation Act enable the making of rules and orders for controlling water pollution but no such rules or orders are indicated to have been made.

67. Australia, Japan, Malaysia, New Zealand, Philippines, the Republic of Korea, Singapore, the Trust Territory of Pacific Islands and USSR each appear to have a comprehensive and implementable framework of water quality legislation.

68. In Australia, the states bear the substantial responsibility in this regard. Under their Clean Water Acts or Water Resources Acts, each state independently administers its water quality programme. Classification of water categories, quality standards for dischargers, licensing of dischargers and licensing costs pegged to volumes are some of the common features of this state legislation. Specific monitoring programmes are undertaken by states while in most cases dischargers are required, at their expense, to monitor and report their discharges.

69. The Water Pollution Control Law, 1970, along with its implementational Cabinet Orders and the specific water quality standards prescribed by the Environment Agency, pursuant to the provisions of the Basic Law for Environmental Pollution Control, 1967, provide the principal support to Japan's effort in this field. The Republic of Korea, to supplement its several general statutes on the subject, has introduced extensive provisions in its Environment Preservation Law, 1977 (effective from 1 July 1978), which will enable the determination of water quality standards,

the regulation of effluent discharges and the suspension/closing/relocation of industrial activity that might seriously impair water quality standards. This law also obligates entrepreneurs to employ monitoring inspectors with such qualifications as may be prescribed by the Government.

70. General responsibility for water quality in New Zealand rests with its National Water and Soil Conservation Authority which has delegated some powers to regional water boards. The Water Resources Council and the Soil Conservation and Rivers Control Council also assist the Authority. Pursuant to comprehensive legislation, water quality is controlled by a system of water classifications, and rights to take water or to discharge into water are required; appropriate conditions are imposed with each right to ensure that the quality of the receiving water does not fall below the classification by the discharge of suspended solids, grease and oil. Quantifiable standards are set as to the volume of the discharge, or uptake, and the pollutants carried. Dischargers, as a condition of their right, are required to monitor and make the data available.

71. Malaysia's Environmental Quality Act, 1974, establishes licensing and other procedures for regulating the discharge of wastes. Malaysia also had amended its Water Enactment, 1920, in 1970 to prohibit the discharge of pollutants into any river except in accordance with the terms of a license. "River" is defined to include any "inland waters", "any subterranean water resources" and "any water in an estuary or sea adjacent to the coast of a state".

72. The National Pollution Control Commission (NPCC) and the National Water Resources Council are the primary agencies for the regulation of water pollution in the Philippines. The NPCC is enabled to perform its functions effectively with the support of a Water Pollution Control Division, a Research and Development Division and a Legal Division. The NPCC, through its Rules and Regulations, has established enforceable quantified water standards. All the wherewithal for implementation - surveillance, monitoring stations, manpower and laboratories - is available.

73. The Trade Effluent Regulations, 1976, and the Water Pollution Control and Drainage Act, 1975, induce a similarly sophisticated water quality programme in Singapore. The USSR has demonstrated its priority for water quality by prescribing five years imprisonment for causing "pollution of rivers, lakes ... which is or could be hazardous to human health or agricultural productivity or causes mass death of fish".

74. Countries which are handicapped in their implementation of water quality legislations include India and Indonesia. India has set up Water Pollution Control Boards to implement its Water (Prevention and Control of Pollution) Act, 1974. The Indian Standards Institution has already helped evolve some quality standards. The management of water quality in Indonesia rests primarily on its Act No. 11 of 1974 and its implementation regulations. These countries find their existing water qualtiy legislation adequate but insufficient resources - laboratories, manpower, funds - have impeded implementation.

75. Bangladesh, Hong Kong, Iran, Pakistan and Papua New Guinea are on the verge of experiencing new water quality legislation. The Environment Pollution Control Ordinance, 1977, of Bangladesh covers water pollution as does the proposed National Environmental Protection Act of Pakistan. But both Bangladesh and Pakistan, because of lack of facilities, are likely to experience difficulties in implementing these ambitious programmes. Iran's proposed Water and Soil Pollution Control Act has been considered a "thoroughgoing attempt" by the United Nations Task Force on Environment. Hong Kong expects to establish a Water Pollution Control Unit to police water pollution in the urban areas (including the harbour) and effluents from agricultural processes and stream cleansing in the rural areas after its proposed Water Pollution Control Ordinace becomes law. The need for specific water quality legislation is also being recognized by Nepal's Department of Soil and Water Conservation.

76. With this new legislation, industries may have to use equipment and processes that would reduce or abate environmental damage. This may some times entail heavy expenditure. Regional members should consider giving certain relief and incentives - tax rebates, write offs accelerated depreciation - as a promotional measure on these additional requirements. This is being done by Japan, New Zealand, Philippines and Singapore and is

/being

being considered by India. The Republic of Korea's Environment Preservation Law, 1977, offers similar incentives and benefits to an entrepreneur who may be required to relocate his industry if his continued operations from the existing site are found to be environmentally hazardous.

4. Marine pollution

77. The efficacy of national legislation in the region can best be measured against the backdrop of international law regulations of marine pollution. International concern against oil pollution has manifested itself in several Conventions. The International Convention on Prevention of Pollution of the Sea by Oil, 1954, (the "1954 Oil Pollution Convention") deals with the prevention of the pollution of the sea. The International Convention on Civil Liability for Oil Pollution Damage, 1969, (the "1969 Civil Liability Convention") establishes a "strict liability" regime for oil pollution damage. The International Convention Relating to Intervention on the High Seas in Cases of Oil Pollution Casualties, 1969 (the "1969 Intervention Convention") authorizes States to intervene on the high seas as a pre-emptive measure to avert or effectively to deal with an oil pollution emergency. The International Convention on the Establishment of an International Fund for Compensation for Oil Pollution Damage, 1971, (the "1971 Fund Convention") visualizes compensating damage attributable to oil spills out of a pool of money created under the Convention.

78. Very few coastal or island States in the region have translated this concern into their domestic legislation. Only Japan has signed all these four Conventions. Australia, India, Iran, New Zealand, Philippines and Singapore have adopted legislation ratifying the 1954 Oil Pollution Convention. Hong Kong is a member of the 1969 Civil Liability Convention and the 1971 Fund Convention. In the absence of such ratifications or of comparable national legislative provisions by other States in the region, the members continue to be handicapped in dealing with the contemporary marine pollution problems caused by heavy tankers and foreign ships on the high seas.

79. Of the regional members, the responses to the challenges of marine pollution of Hong Kong, Japan, New Zealand and Singapore appear to be more comprehensive. Singapore, for example, has accomplished the following:

/(a)

(a) It has, as noted, ratified the 1954 Oil Pollution Convention. Its implementational Pollution of the Sea Act, 1971, has additionally introduced strict measures to prevent the pollution (through discharge of oil and oily mixtures) of Singapore Waters. Amendments were affected by the Civil Liability (Oil Pollution) Act, 1973, and by the Prevention of Pollution of the Sea (Amendment) Act, 1976;

(b) The Civil Liability (Oil Pollution) Act, 1973, imposes strict liability on ship operators and on offshore/onshore facilities for oil pollution damage;

(c) The Prevention of the Pollution of the Sea Regulations, 1976, provide for storage of oil dispersants by petroleum companies for use in contingencies;

(d) An oil spill contingency plan has been in existence since 1971 in the form of Marine Emergency Action Procedure.

80. The laws of Hong Kong, Japan and New Zealand deal with marine pollution equally effectively. Hong Kong's Dumping at Sea Act, 1974, prevents indiscriminate dumping at sea unless the dumping is licensed. Its Oil Pollution (Land Use and Requisition) Ordinance, 1977, allows the requisitioning of any property for the purpose of oil pollution control and makes the offender liable for compensation for cleaning-up costs. Comparable provisions are found in Japan's Marine Pollution Prevention Law, 1970, and in New Zealand's Marine Pollution Act. Hong Kong's Merchant Shipping (Oil Pollution) Order, 1975, provides for oil-carrying cargo vessels to have compulsory insurance against liability for oil pollution. To emphasize its commitment against oil pollution further. Hong Kong is considering a new Port Control Act which, in supplementing existing legislation, will raise fines for oil pollution offences from $HK 20,000 to $HK 200,000. Hong Kong's proposed Water Pollution Control Ordinance will also regulate marine pollution. Hong Kong, Japan and New Zealand all have contingency oil spill plans.

81. Australia's Navigation Act, 1912-72, and the Pollution of the Sea by Oil Act, 1960-72, are the two items of Federal legislation dealing with oil pollution. Relevant provisions under the former Act are directed

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at circumstances where oil is "escaping" from a ship and in practice these provisions seem to be relevant primarily to maritime casualties rather than to ordinary operational discharges. The latter Act, in conjunction with complementary legislation in each of the Australian states basically implement the International Convention for the Prevention of Pollution from the Sea by Oil 1954. The Navigation Act provides for the recovery from shipowners of governmental expenses incurred in preventing or reducing oil pollution from ships. States remain responsible for waters within harbours and rivers and, through a wide range of legislation, control land-based discharges into internal waterways and sewage systems which ultimately empty into the sea.

82. In the Philippines, Presidential Decrees 600 and 979 deal specifically with marine pollution. Rules and Regulations for Prevention, Containment, Abatement and Control of Marine Pollution are also indicated as being in consonance with the Philippine Environment Code. These measures regulate the discharge of oil, oily mixtures, noxious substances and refuse matter into the sea, bays, shores, rivers and lakes. Presidential Decree 979 prohibits discharge of pollutants on the high seas. The Philippines has also adopted an oil spill contingency plan.

83. Indonesia regulates pollution caused by offshore exploitation and exploration of mining activities by Regulation 17 of 1974; regulation against pollution from vessels is provided under the Petroleum Transport Ordinance, 1927, and the Pilotage Service Ordinance, 1927 (being updated). These 1927 ordinances have adopted the principle of strict liability of tanker owners/oil companies for oil spills. A national oil spill contingency plan is being prepared in Indonesia.

83. The Republic of Korea has a new Marine Pollution Control Act, 1977. effective as of 1 July 1978.

84. Malaysia's Environmental Quality Act, 1974, has provisions regarding oil discharges and the liability of the party causing the pollution to bear costs for removing it. Further, it enables enforcing officials to detain any ship involved in a spill or discharge and, with court permission, to sell it in the event the owner is unable to pay the fines and costs. The Malaysian Government has also adopted an oil spill contingency plan for the Straits of Malacca.

/85.

85. In Papua New Guinea, anti-pollution regulations have been promulgated under the Merchant Shipping Act. Legislation is further being drafted dealing with pollution on the high seas, and introducing the principle of strict liability for pollution. The Environment Containments Act will cover spills from offshore oil wells. Papua New Guinea is also formulating an oil spill contingency plan.

86. A 1974 Decree of the USSR Council of Ministers has intensified the "struggle against marine pollution by substances hazardous to human health or the living resources of the sea".

87. In Thailand, legislation is being drafted which will, on enactment, introduce the provisions of some of the International Conventions indicated earlier. Thailand, however, presently has an oil spill contingency plan.

88. Tuvalu has the United Kingdom Merchant Shipping (Oil Pollution) Act, 1971, and the Trust Territory of Pacific Islands has both discharge regulations as well as an oil contingency plan. In Sri Lanka, the Maritime Zones Law, 1976, has provisions for prevention of marine pollution in a 200-mile Pollution Prevention Zone. The Indian Merchant Shipping Act, 1958, also controls marine pollution and prohibits discharges on the high seas. The Indian Ports Act, 1908, enables the Government to regulate the manner in which oil or oil-mixed water is discharged in any port and it also makes discharge of ballast or rubbish punishable. India's Territorial Waters, Continental Shelf, Exclusive Economic Zone and Ohter Maritime Zones Act, 1976, also facilitates marine protection measures. Pakistan indicates that its proposed legislation will comprehensively cover all areas of concern to marine pollution.

89. Some coastal countries (Bangladesh, Cook Islands, Fiji) do not have any specific marine pollution legislation.

5. Air pollution

a. Stationary sources

90. The range and type of air quality legislation in the region is susceptible to the following classifications:

(a) No legislation;

(b) The situation is covered by general statutes;

(c) There is specific air quality legislation;

(d) Air quality legislation is proposed;

/As most

As most of the country responses had given the same answers to water pollution as to air pollution, some of the considerations in the preceding section are equally applicable here.

91. The interest in the region for air quality legislation is recent. The reason clearly is that most of the members have not attained the degree of industrialization that would warrant remedial legislative measures for atmospheric control. Thus, Cook Islands, Fiji, the Trust Territories of Pacific Islands and Tuvalu have no legislation regarding air pollution.

92. Although the present laws in India, Indonesia, Pakistan, Papua New Guinea and Sri Lanka do not provide any specific air quality standards, the "nuisance" provisions of their general laws may again be relevant. India could invoke its Factories Act, 1948, and the Mines Act, 1952, to control specific air pollution. Additionally, some Indian states have Smoke Nuisance Act. Indonesia has a Nuisance Act and some provisions of its Mining Laws may also be applicable. Provisions of the Factories Act may be helpfully pressed in Nepal, Pakistan and Sri Lanka, but these are limited to the occupational health of the factory workers.

93. Australia, Hong Kong, Iran, Japan, Malaysia, New Zealand, Philippines, the Republic of Korea, Singapore, Thailand and the USSR have existing specific air quality legislation. Australia substantially relies on state legislation for air quality surveillance, monitoring and standards. Hong Kong's Clean Air Ordinance, 1959, includes the requirement for smoke control areas within which emission of smoke is strictly limited. By 1974, the whole of Hong Kong had become a smoke control area, a significant accomplishment considering that even in the United Kingdom which has generally been regarded as a world pace-setter in smoke control, there are no cities with 100 per cent smoke control coverage. Iran has enacted the National Clean Air Act, 1975, whereunder the Department of Environment can promulgate "standards for the free air in each region". Malaysia's Division of Environment has a similar mandate under the Environmental Quality Act, 1974. Japan's Air Pollution Control Law, 1968, supported principally by its Enforcement Ordinances and the determination of specific air quality standards by its Environment Agency pursuant to the provisions of the Basic Law for Environmental Pollution Control, 1967, provide an adequate framework

/for controlling

for controlling air pollution. The Environment Preservation Law, 1977, effective as of 1 July 1978, comprehensively covers air pollution control in the Republic of Korea. New Zealand has been satisfied with its Clean Air Act. In the Philippines, NPCC is aided by an Air Pollution Control Division. Air quality standards are established by NPCC and implementational follow-up is adequate. Singapore has a Clean Air Act, 1971, Regulations, 1972, and Clean Air Order, 1973. There is an Anti-Pollution Unit in the Prime Minister's Office with two groups, one for ambient air monitoring and the other for administering the Clean Air Act. In Thailand, while the Public Health Act, 1941, authorizes the establishment by local authorities of air quality standards, this potential has not been appropriately exploited so far. The USSR has an extensive air quality monitoring system but the legislation has not been indicated. The importance, however, attached to air quality is highlighted by a five-year term of imprisonment for "air pollution causing considerable harm to human health".

94. Air quality legislation is proposed in Bangladesh, Hong Kong, India, Pakistan and Papua New Guinea.

95. It could be generalized that air quality legislation is only the beginning of atmospheric pollution control. Such legislation has to be followed by appropriate standard-setting which is generally left to the central environmental agency or another governmental agency. Thus while Iran, Malaysia, the Republic of Korea and Thailand have attained the legal capability to provide air quality standards, such standards do not appear to have been established.

96. Growing international concern for air and noise pollution caused by industrial activity was reflected at the sixty-third session of the International Labour Organisation by the adoption of the Working Environment (Air Pollution, Noise and Vibration) Convention, 1977, and the supplemental Recommendation. Article 4 of the Convention provides:

> "1. National laws or regulations shall prescribe that measures be taken for the prevention and control of, and protection against, occupational hazards in the working environment due to air pollution, noise and vibration.

/"2.

"2. Provisions concerning the practical implementation of the measures so prescribed may be adopted through technical standards, codes of practice and other appropriate methods."

The Convention and the Recommendation apply to "all branches of economic activity". Regional members should consider the ratification of the Convention as an appropriate incentive for national legislation.

b. Mobile sources

97. Air pollution by automobile exhaust is controlled in several ways in the region. The most prevalent form is dealing with this problem through a wide variety of Traffic Regulations and Motor Vehicles Acts. Legislation prohibiting the projection of excessive smoke from motor vehicles exists in some Australian states under various Acts such as the Road Traffic Act, 1961-1973 of South Australia, the Motor Car Act, 1958, of Victoria and the Traffic Act, 1919-1972, of Western Australia. Regulation 49 of the Traffic Regulations of Fiji prohibits vehicle emissions. Enforcement of this has been rendered difficult by court decisions which hold that a visual opinion cannot be a basis for conviction. Malaysia's Road Traffic Ordinance, 1958, and the Motor Vehicles Rules, 1959, prohibit the use of vehicles which emit smoke and visible vapour. Its Motor Vehicles (Control of Smoke and Gas Emissions) Rules, 1977, have recently prescribed penalties for diesel driven vehicles that exceed specified limits in smoke centre tests. Section 70 of the Indian Motor Vehicles Act, 1939, enables the Government to make rules on emission. Nepal's Vehicles Act empowers the Government to make rules for controlling vehicle discharges and smoke emissions and other atmospheric pollution caused by vehicular operations. It is an offences under the Transport Act of New Zealand to operate a vehicle which emits excessive smoke or visible vapour. In Singapore, Rule 95 of the Motor Vehicles Rules provides against visible vehicle emission. For diesel operated vehicles, specific emission limits have been established. Exhaust smoke from vehicles is controlled, in Hong Kong, under the Road Traffic (Construction and Use) Regulations. It has been prescribed that all petrol-engined vehicles manufactured after 1 November 1974 and all diesel-engined vehicles manufactured after 1 September 1976 must comply with the internationally accepted ECE emission

/standards.

standards. The Motor Traffic Act of Sri Lanka would appear to be relevant in this context but it is indicated that vehicle emission controls are not enforced. The position in Bangladesh and Pakistan is the same except that with the Environment Pollution Control Ordinance, 1977, a new urgency has been recognized concerning this problem in Bangladesh and arrangements are being made to regulate the discharge of carbon monoxide from vehicles with the help of mobile laboratories.

98. Iran has not yet promulgated standards for motor vehicle emissions. Its Department of Environment has, however, contracted with the Ariamehr University for the formulation of proposed standards for new and existing vehicles.

99. In Indonesia, vehicle emissions are regulated by the general provisions of the Penal Code and the Nuisance Act. Specific chemical compositions of allowable vehicle emissions are determined by Decree by the Ministry of Industries.

100. In spite of the existence of legislation in most countries, there is need for a new look at vehicle-generated pollution. Most of the legislation is qualitative and needs to be drastically overhauled and strengthened to meet modern problems. One approach obviously is to insist on anti-pollution devices and here the manufacturers of vehicles in the region such as Japan and the Republic of Korea could impose special manufacturing requirements. Contemporary legislative response in at least one of these countries indicates a growing awareness of such responsibility.

101. Increasingly, other members are also requiring the installation of emission control equipment. Papua New Guinea's proposed Environmental Contaminant Act has such a provision. A recent decree of the Philippines stipulates that transportation vehicles shall be equipped with antipollutant devices at a designated future time. Singapore requires new cars to have crank case recirculation devices.

102. An effective motor vehicle emission control system would require comprehensive inspection. Several members require periodic inspection of vehicles. The USSR entrusts such inspection to the State Automobile inspectorate.

/103.

103. Staggering of office hours is also adopted by some countries to contain motor vehicle caused pollution (e.g., the Philippines).

104. Cook Islands, the Trust Territories of Pacific Islands and Tuvalu have no legislation or regulations on this subject.

6. Noise

105. Noise, a growing environmental problem in many parts of the world, emanates from six principal sources: industrial noise, construction noise, recreation and advertising noise, highway traffic noise, railway noise and airport and air base noise. Noise levels in the ESCAP region apparently have not assumed the dimensions which warrant extensive legislative controls. The problem of noise appears confined to a few busy metropolises and here legislative responses are beginning to surface.

106. Some countries do not have any noise legislations whatsoever (e.g., Cook Islands, Trust Territory of Pacific Islands, Tuvalu). Others, including Japan, New Zealand and the Republic of Korea have detailed and specific regulatory provisions on noise originating from different sources.

107. The familiar response, however, to queries on noise pollution legislation is that such legislation is there in the following forms:

(a) Nuisance ordinance (Indonesia);

(b) General acts controlling noise from loudspeakers (Fiji, Hong Kong, India);

(c) Motor vehicle acts requiring controls on vehicle noise (Hong Kong, India, Indonesia, Philippines, Singapore and Sri Lanka);

(d) Factories act provisions (Hong Kong, India and Sri Lanka) and mining laws (Sri Lanka) regulating noise regulation in one form or another. Under the Indian Factories Act, for example, noise-induced hearing loss of a worker is compensable. Because of their common legal heritage[8/] and the pre-independence vintage of the legislation, Bangladesh and Pakistan can be generally said to have the same legislation on noise as India;

/(e)

8/ India and Pakistan, at the time of their independence in 1947, succeeded to much legislation previously applicable to the former British India. Bangladesh, in turn, became a successor of some of this legislation at the time of its separation from Pakistan in 1971.

(e) Civil aviation acts enabling aircraft noise regulatory measures (Nepal);

(f) No existing comprehensive legislation but likely to be covered in a proposed enactment (Bangladesh, Hong Kong, Pakistan and Papua New Guinea).

108. With increasing pressures on urbanization, industrialization, motor vehicle traffic and air traffic, the region is gradually shaking off this complacency. New Zealand already has various enactments controlling noise from aircrafts, boats, construction sites, factories and motor vehicles. Japan's Noise Regulation Law, 1968, regulates industrial noise, construction noise, and the noise levels of individual motor vehicles. Pursuant to the Basic Law for Environmental Pollution Control, 1967, its Environment Agency generally establishes noise standards for construction sites, aircrafts, vehicles and railways (Shinkansen Superexpress Railway). Airport and air base noise in Japan is also dealt with under the Law Concerning Prevention, etc. of Disturbance Caused by Aircraft Noise in the Vicinity of Public Aerodromes and the Law Concerning Adjustment, etc. of the Environs of Defence Facilities. The Vibration Regulation Law, 1976, regulates vibration generated by industrial or construction activity. The Republic of Korea's recent Environment Preservation Law, 1977, seeks to enable comprehensive noise regulatory measures and has special provisions regarding construction noise.

109. Because of airport-caused noise, Singapore has subjected aircraft landings and take offs as from 1970 to Company Noise Statement Procedures. With this are coupled strict airways procedures including minimum altitude restrictions. The Philippines seeks to cover noise pollution under Presidential Decree 1152 and this legislation covers noise from vehicles, construction sites and factories. A survey of noise levels in Tehran and the preparation of draft noise control legislation is indicated in Iran. Such draft legislation includes noise from road traffic, air transportation, railways, factories and workshops and miscellaneous sources and sets out standards for both noise "emission" and noise "immission". Of interest also is the amendment to Hong Kong's Public Health and Urban Services Ordinance which regulates airconditioning noise.

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110. From a review of the country responses, it could be generalized that noise pollution is not a dominant problem in the region. The issue may be assuming a pressing urgency in certain cities and as has been observed, some countries are gradually introducing noise legislation.

111. Three types of legislative approaches are recommended for prevention of noise: (a) regulatory measures against the noise source; (b) noiseproofing measures between the noise source and the affected area; and (c) measures to prevent harmful effects in the affected areas. It is evident that the first of these would be the most effective and, generally, most economical. Yet there may be cases when technology is not available or is too costly to regulate a noise source. In such a case, for example, until quiet aircraft are developed, efforts should be concentrated on the second and third approaches. The second approach would be particularly helpful for future planning which could, to pursue our example, include the establishment of spacious airport sites, tree planting for sound protection and restriction of land use in the vicinity of airports.

112. It was noted in the section on air pollution that noise caused by economic activity has been the subject matter of the ILO Working Environment (Air Pollution, Noise and Vibration) Convention, 1977. Ratification of this Convention would stimulate national responses to an increasingly important area of concern.

7. Solid waste management

113. In Australia, there is no national legislation on this subject as solid waste management is the responsibility of state and local governments. However, through governmental departments concerned with environmental protection, the Federal Government seeks to effect an integrated approach to this aspect. Disposal is generally in sanitary landfill sites operated by local government. Only in a few densely populated areas have volume reducing processes such as shredding, baling and incineration been practised.

/114.

114. Similarly, solid waste management is generally the responsibility of local bodies and municipalities and is covered by local legislation in Bangladesh, India, Pakistan and Sri Lanka. The Health Act of New Zealand empowers local authorities to provide solid waste disposal services. Also, its Town and Country Planning Act regulates the zoning and siting of rubbish tips and its Water and Soil Conservation Act controls leachates.

115. In Hong Kong, solid waste is effected by controlled tipping and incineration. A composting plant and a high level density baling plant are being constructed. While solid waste disposal is so far handled as an administrative measure, the proposed Waste Disposal Ordinance will establish statutory waste disposal plans.

116. The impact of growing industrialization in Japan emphasized the need for specific solid waste disposal regulations. The development of its coal and petro-chemical industries particularly changed, both qualitatively and quantitatively, the dimensions of its solid waste. Hazardous and unmanageable pollutants required specific handling. Accordingly, the existing Public Cleansing Law was drastically revised leading to the enactment in 1970 of the Waste Disposal and Public Cleansing Law. This law covers both "general waste" produced as a result of the daily living of the people such as garbage and human waste and "industrial waste" produced by industrial activity such as cinder, sludge, ashes, waste oil, waste acid, waste alkali and waste plastics. The basic responsibility for waste disposal is placed on the enterpriser. The enterpriser is obligated to endeavour to lessen the amount of wastes by regeneration or re-use of the wastes. There are also provisions for Disposal Plans, Disposal Plants and prohibiting certain industrial waste discharges.

117. The Republic of Korea's Environment Preservation Law, 1977, also appropriately recognizes the importance of solid waste disposal. As in Japan's Waste Disposal and Public Cleansing Law, the Republic of Korea's law requires prior permission for activity relating to industrial waste collection, transportation or disposal.

/118.

118. Under Fiji's Public Health Act, refuse can only be dumped with permission. Under Singapore's Public Health Act, wanton dumping and littering is illegal. In Nepal, the Factory and Factory Workers Act and the Planning Implementation Act enable solid waste regulation but it appears that no such regulations have been framed.

119. Safety Law No. 1 of 1970 has improved the legislative cover for solid waste disposal in Indonesia, although disposal functions continue to be delegated to local governments. In the Philippines, Presidential Decree 1152 deals comprehensively with this matter, leaving implementation at local levels.

120. Cook Islands, Nauru and Tuvalu have no problem requiring legislation in this area. Papua New Guinea will cover some waste disposal matters in its proposed Environmental Contaminant Act. In the Trust Territory of Pacific Islands, the Environmental Protection Board is in the process of proposing solid waste disposal regulation.

121. Bangladesh and Pakistan indicate adequate provisions in the Bangladesh Environment Pollution Control Ordinance, 1977, and the proposed Pakistan National Environmental Protection Act.

122. On review of the country reports, it would seem that because of the general low level of industrialization, solid waste management has not acquired a high priority in the member's legal systems. However, with growing pressures on land resources, attention would need to be given to comprehensive planning in this matter. Methods of refuse minimization such as incineration and composting would require to be introduced and legally regulated.

8. Coastal zone management

123. Most littoral nations in the region do not appear to have responded to the growing need to have specific legislation on coastal zone management. The prevalent approach is to group such management with general statutes dealing with rural and urban planning. The promising potential of on- and off-shore development has thus not been fully utilized.

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124. Bangladesh, Cook Islands, Fiji, India, Malaysia, Pakistan, Papua New Guinea, Philippines and Sri Lanka do not have any significant coastal zone management through legislation. Some of them are, however, moving in that direction. Bangladesh indicates a consciousness of the need to regulate coastal zones better. In India, coastal zones are dealt with by coastal states although the need is being felt for a national policy. Proposed legislation in Pakistan is expected to provide detailed regulations in this area. Papua New Guinea has dealt with this subject in its proposed Conservation Areas Act. The Sri Lanka Parliament will soon have before it legislation for regulation of all activities in the coastal zone.

125. In New Zealand, Harbour Boards are primarily charged with the responsibility for shore-based development including reclamation. Under the Continental Shelf Act, all rights of exploration and exploitation of natural resources are vested in the Crown; licenses to prospect for and mine minerals can be subjected to extensive conditions. New Zealand is developing regulatory procedures for its recently claimed 200-mile exclusive economic zone.

126. Offshore refuse dumping has been handled differently. New Zealand's Marine Pollution Act and Hong Kong's Foreshores and Seabeds Ordinance, 1974, govern offshore refuse dumping. In Pakistan, the port authorities appear to act in this matter through administrative actions whereas certain members such as the Philippines regulate offshore refuse through national decrees on pollution (Presidential Decree 1152). Sri Lanka points out that it has so far not taken any control measures for offshore refuse dumping but provisions exist in its Maritime Zones Law and the Tourist Development Act to prevent pollution of the sea. Some members do not have any offshore dumping controls (e.g., Fiji).

127. Fishing is regulated by Fishery Laws which generally allow fishing in the territorial and high seas. Hong Kong's Fisheries Protection Ordinance, 1964, prohibits the use of toxic substances and explosives for fishing. Papua New Guinea's proposed regulation on tuna fishing, prawns and lobster recognizes and responds, probably, to over-harvesting. Other countries are likely to respond similarly if presented with an identical problem.

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128. Generally, the regional members have no legislation covering offshore mineral development but this is being covered in recent proclamations of a 200-mile exclusive economic zone (see, e.g., Sri Lanka's Maritime Zones Law No. 22 of 1976 and India's Maritime Zones Act, 1976).

129. Australia, Indonesia and the USSR may be cited as examples of members that have attempted to deal with this area out of the routine. Although Indonesia is studying the possibility of comprehensive coastal zone management, it has specific regulations on offshore refuse dumping (Territorial Sea and Maritime Environment Act, 1939), oil and natural gas refuse dumping (Government Regulation No. 17 of 1974), offshore mineral development (Continental Shelf Act, 1973, and Mining Law of 1967), fishing (Fishing Ordinance, 1920, Pearl and Sponge Fishery Ordinance, 1916, and Whaling Ordinance, 1927). Correspondingly, Australia has the Petroleum (Submerged Lands) Act, 1967-1973, for offshore petroleum development, the Beaches, Fishing Grounds and Sea Routes Protection Act, 1932-1966, for offshore refuse dumping and the Federal Fisheries Act, 1952, for fishing beyond the territorial sea. Each of these pieces of legislation is supplemented by state legislation. Attention should also be drawn here to the specific Marine Pollution Acts and other relevant laws of Japan, New Zealand and the Republic of Korea. Japan, for example, has several laws on coastal protection, erosion and landslide control.

9. Forest conservation

130. Regional members, with forests, generally have forest laws or forest manuals and have entrusted the management of forestry to specific departments in the government. A notable feature is that even where the legal framework is considered adequate, implementation is impeded by certain considerations. Many members have pointed to population and poverty pressures and staff shortages as distorting their national commitment to preserving their forest resources (e.g., India, Pakistan and Sri Lanka). Indonesia adds vastness and remoteness of forests as handicapping implementation.

131. In Afghanistan the responsibility for protecting and managing forests generally lies with the Forest and Range Department of the Ministry

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of Afghanistan. However the authorities in charge of development of two provinces, namely the Paktia and the Kunar, are directly responsible for the protection and management of rangeland in their respective provines. Article 518 of Original Law regarding illegal cutting of forest trees and newly planted seedlings constitutes in general, forest protection regulation. Besides, the Forest Administration and Management Law, which regulates the responsibilities of people and the State as regards forest management and administration, has been drafted and forwarded to the authorities concerned for official approval. It may be noted that lack of a clear land-use policy makes it extremely difficult to enforce the forest protection law in Afghanistan.

132. In Australia, Federal responsibility is limited to Federal forestry matters and state forest conservation is left to states. Each state has Forestry Act or equivalent legislation and a state forestry agency is designated as supervising state forestry policies. It is pointed out that such agencies have adequate legislative backing for the management protection and utilization of the state's forest resources. Co-ordination of Federal and state policies is achieved through the Australian Forestry Council which comprises ministers concerned with forest matters.

133. The scenario in other federal systems is somewhat similar (India and Pakistan). The Forest Act, 1927, was inherited by both India and Pakistan at the time of their independence in 1947. This Federal Act is supplemented by provincial enactments. Resultantly, there is an appropriate legal basis for adequate forest management in these countries. India, however, is contemplating revisions to this 1927 Act to keep pace with present day requirements. The same Forest Act, 1927, was inherited by Bangladesh and is supplemented there by Rules and Procedures seemingly adopted in 1973. In Sri Lanka, institutional management of forests is additionally shared by the Forest Department with the State Timber Corporation.

134. Legislation enables the New Zealand Forest Service to regulate forestry operations in State forests using a system of management plans. The Forests and Countryside Ordinance, 1974, provides a statutory basis for the protection of forests in Hong Kong. Nepal

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points to at least four Acts: Private Forests Nationalization Act, Forest Act, Forest Conservation (Special Provisions) Act and the National Park and Wildlife Conservation Act. The fundamental legal basis for forest administration in Indonesia is provided by the Basic Act No. 5 of 1967 complemented by Government Regulations No. 22 of 1967 and No. 6 of 1968. Philippines indicates 18 different items of legislations on the subject.

135. Timber forestry is of importance to some members. The Philippines requires timber licensees to submit to the Bureau of Forest Department managements plans of forests utilized by them. These plans are the five-year plans and the yearly operation plans. Sri Lanka, as indicated, has established the State Timber Corporation for long-term timber management. Papua New Guinea is finding a serious gap in that the current forestry legislation allows landowners, in some cases, to deal directly with timber companies diluting State control in this matter. Papua New Guinea is therefore contemplating new legislation to seemingly remedy this lacuna.

136. The USSR report shows extensive governmental control on forestry matters through the State Committee on Forestry but, like its responses in other fields, specific legislation is not indicated.

137. Cook Islands has no forests and hence no legislation on this subject. Fiji reports that its Forests Act, 1953, is adequate. Thailand has the Forest Act, 1941, and the National Forest Reserves Act. 1964, as the two principal statutes dealing with forest management.

10. Parks and wildlife

138. The region's response to parks and wildlife protection appears to be generally satisfactory at least from the legislative standpoint. There is extensive legislation on these subjects in all the reporting member nations. Yet it is noted that while laws relating to forests are to some extent management oriented, the laws concerning animals and birds lay emphasis primarily upon protection and regulation of hunting and the aspect of management of wildlife resources including habitat conservation is generally ignored. There is, therefore, room for improving such legislation, but it has to be conceded that it furnishes more than an adequate starting point for a meaningful commitment in this field. The perennial problem of scarcity of national resources and of uneducated masses continues, however, to haunt implementation.

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139. In Afghanistan, one national park (Bande Amir) and two wildlife sanctuaries (Ab-i-Estada and Dashte Navar) have been established. Besides several other areas (Ajar valley, Big and Small Pamirs) have been set aside and administered as wildlife preserves. Although the Forest and Range Department of the Ministry of Agriculture has the responsibility of surveying, studying and protecting the above-mentioned areas, the exploitation of the wildlife resources of those areas are the responsibility of the Afthan Tourist Organization. Under Presidential Decree No. 707/(56/3/16), Ab-i-Estada and Dashte Navar have been proclaimed flaming and waterfowl sanctuaries. By Presidential Decree No. 533/(56/3/9) a ban has been imposed on hunting of animals that are enemies to mice, and of endangered species. On the basis of decree No. 628/(26/12/77) of the Authorities concerned, the sale and exports of fur and skins of predatory animals were banned for a period of three years.

140. The Australian National Parks and Wildlife Service is established under the National Parks and Wildlife Conservation Act, 1975. States deal with their parks and wildlife through a series of their own National Parks and Wildlife Acts. Co-ordination is achieved through a National Council of Nature Conservation Ministers.

141. The Bangladesh Wildlife Preservation Act, 1973, establishes national parks, game reserves, wildlife sanctuaries, water fowl protection centres, and a list of protected animals. Hunting is licensed (bag and season limits) and restricted to non-protected animals.

142. Legislation exists in Cook Islands for setting aside certain areas as national parks or reserves, for the closing of certain areas, particularly lagoons and for propagation of plant and marine life (e.g., pearl shells). As there is very little wildlife, there is no legislation for the protection of particular species of wildlife.

143. Although Fiji does not have a national park system, reserve and conservation areas are protected by the Forest Department using its powers under the Forest Act. A Birds and Game Protection Act and another Birds Game and Fish Ordinance are indicated.

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144. In Hong Kong, "country parks" and "special areas" are designated as protected areas under the Country Parks Ordinance, 1977. The difference between a country park and a special area is that the latter extends greater protection to the wildlife, flora or fauna therein and is normally less accessible to the public. Special statutory regulations exist to protect the plant and animals in country parks and special areas. The Wildlife Animals Protection Ordinance, 1976, controls hunting and the Animals/Plants (Protection of Endangered Species) Ordinance, 1976, protects specified species of plants and animals.

145. The Wildlife (Protection) Act, 1972, establishes comprehensive federal regulation in India which is supported by state agencies. It identifies "national parks", "sanctuaries/reserves", "reserved forests" and "protected species" and regulates the sale, transport or business of protected animals.

146. In Indonesia, the Basic Act No. 5 of 1967 with supporting Regulations provides the classification of certain forest areas as "reserved areas", "national parks", "wildlife sanctuaries", "touristic forests" and "convention forests". As much as 30 per cent of existing forests are specifically regulated under the Nature Protection Ordinance, 1941, and wildlife protection is extended by the Wild Animal Protection Ordinance, 1931, the latter having detailed provisions on protection of certain species of wildfife (e.g., rhinoceros on the islands of Java and Sumatra). Hunting and trade of protected animals is also regulated.

147. The Game and Fish Law, 1967 (amended in 1975), provides comprehensive regulation for all activities affecting wildlife, game and fish resources in Iran. It authorizes the promulgation of a list of protected animals and the usual regulations of hunting licenses, bag limits, hunting methods and trade in protected animals and/or animal trophies.

148. The Nature Conservation Law, 1972, the Natural Parks Law, 1967, the Wildlife Protection and Hunting Law, 1918, and the Law Relating to the Regulation of Transfer of Special Birds, 1972, are the principal items of legislation in Japan.

149. A new National Parks Act is under preparation in Malaysia.

150. Indicative of Nepal's special interest in parks and wildlife, four national parks and three wildlife reserves have been established under the

National Park and Wildlife Conservation Act. Regulations have further specified protected species of wildlife. Hunting is regulated by licence which is not given for endangered species or for closed seasons or for closed reserves. Commercial traffic in wildlife related goods is prohibited. Nepal is also a party to the Convention on International Trade in Endangered Species of Wild Fauna and Flora, 1973. Another commendable aspect is that implementation of these statutes and regulations is indicated to be effective. This is explained to be due to the awarding of gaol sentences to offenders even when such sentences are not mandatory and the offenders could, legally, be merely fined. As a result of such strict enforcement, there are very few poaching incidents and some species that had earlier bordered on extinction are no longer endangered.

151. New Zealand indicates a well established and extensive system of parks, reserves and wildlife preservation. There are controls over hunting, fishing and the import and export of hides and trophies.

152. National parks, wildlife sanctuaries and game reserves are common in Pakistan. To supplement their efforts, the provincial departments have established wildlife management boards. At the Federal level, a National Council for Conservation of Wildlife has been constituted to direct policy in this matter. Wildlife legislation provides for protected species and a ban on hunting such endangered species. There are also requirements for licensing, shooting fees, closed seasons, closed areas, bag limits, prohibited methods of hunting and prohibitions on trade in protected animals.

153. The National Parks Act, the Fauna (Protection and Control) Act, 1966, and the Crocodile Trade (Protection) Act, 1974, are relevant legislation in Papua New Guinea. The 1966 Fauna Act protects certain species (all species of birds of paradise, the New Guinea eagle, the Boelen's python, seven species of birdwing butterflies etc.). However, protection in Papua New Guinea does not imply protection against Papua New Guineans who may hunt or keep protected wildlife, dead or alive, but they are required to hunt them with "traditional weapons" for "traditional purposes". Papua New Guinea, displaying an intense interest in wildlife preservation similar to that of Nepal, is a party to the Convention on International Trade in Endangered Species of Wild Fauna and Flora, 1973.

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154. The recent Presidential Decree 705 of 19 May 1977 extensively deals with "public forests", "national parks", "game refuge or bird sanctuaries", "marine parks", "seashore parks", "watersheds" and similar subjects in the Philippines but implementing regulations thereunder is still awaited. There are certain specie protection statutes: various Republic Acts protecting the tamaraw and the monkey-eating eagle. Hunting was suspended following imposition of martial law.

155. In Singapore the Parks and Trees Act, 1975, controls activities in parks and the Nature Resources Act establishes reserves for the protection of wildlife. Hunting is licensed and restricted to scientific purposes.

156. Sri Lanka has legislation setting aside areas as national parks, reserves and wildlife sanctuaries (Fauna and Flora Protection Ordinance). Wildlife is categorized as (a) not protected, (b) partially protected (e.g., wild pigeons and teal) that can be hunted in open season, and (c) absolutely protected (e.g., bear monkey, water lizard, turtles). Bear, leopard and crocodile can be shot under special license. Prohibited methods of shooting are also prescribed.

157. Thailand's wildlife conservation programme is conducted pursuant to its Wild Animals Reservation and Protection Act, 1960.

158. The Wildlife Conservation Ordinance, 1975, of Tuvalu authorizes declaration of closed seasons and prohibited areas and the making of other orders in respect of wildlife, although Tuvalu's only animal wildlife are rats. Firearms require licenses but there is no restriction on netting or stoning of birds except when prohibited or regulated.

159. The Trust Territory of Pacific Islands deals with this subject through its Land Planning Act and the Endangered Species Act.

160. The USSR appears to have extensive regulation but its legislation is not indicated.

11. Mineral development

161. Legislation on mineral development is naturally confined to those members that have minerals. Cook Islands and the Trust Territory of Pacific Islands, for example, have no mining activity.

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162. Environmental considerations against which the adequacy of mining legislation can be assessed include appropriate planning criteria for the granting of mining concessions, waste disposal and tailing provisions and post-mining restoration measures. What, therefore, is important is not whether a particular member has mining legislation - most of them do - but whether such legislation includes adequate impact assessment requirements, waste disposal measures and restoration requirements.

163. In Australia, proposals for new mineral development requiring the approval of the Australian Government are subject to the Environment Protection (Impact of Proposals) Act. This means that nearly all new mining projects are subject to Australian Government environmental scrutiny. Mineral projects in the states are also subject to state environmental assessment procedures and to state pollution control laws. Waste disposal provisions are, for example, found in the laws of Malaysia (Mining Enactment, 1929, and its counterpart state legislation), Indonesia (Mining Law No. 11 complemented by several Government Regulations and Ministerial Decrees), the Philippines (Mineral Resources Development Decree, 1974 and the Philippine Water Code) and India (Mines and Minerals Act, 1957). However the mining laws of Bangladesh, Pakistan[9/] and Sri Lanka impose no such requirements.

164. Restoration measures are not necessary in Bangladesh, are not obligatory but may be required in India, New Zealand and Pakistan, and are obligatory in Indonesia, Philippines, Sri Lanka and the USSR.

165. There is need, therefore, for "modernizing" existing mining legislation in some countries and to incorporate therein environmental considerations. The Indonesian Mining Law No. 11 of 1967 incorporates both resource orientation as well as environmental protection criteria. It may be useful for the other members of the region to look at this experience closely.

12. Pesticides, fertilizers, toxic substances and radioactive materials

166. Because of its Federal system, Australia has complex legislative provisions and administrative arrangements relative to the above-captioned products. Different state legislation regulates the registration, sale, labelling, packing and advertizing of pesticides. Uniformity in state legislation can be achieved by the incorporation therein, of recommendations of the Technical Committee on Agriculture Chemicals, a Joint Commonwealth/state body set up under the Australian Agricultural Council. A similar network of state legislation covers toxic

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9/ Tariq Hassan, The mining laws in Pakistan, 14 Pakistan Administrative Staff College Journal (1977), pp. 45-52.

substances and there is, again, a Commonwealth/state co-ordination body. There are no legislative provisions regarding use of fertilizers. The Australian Environmental Council is engaged in developing assessment and control machinery for a wide variety of environmentally hazardous chemicals. The State Radioactive Substances Acts or the State Health Acts regulate the control of radioactive substances.

167. Bangladesh has indicated the agencies relative to controlling these substances but no legislation is mentioned.

168. Cook Island effects regulation through administrative arrangements geared to health and safety rather than to environmental-oriented criteria.

169. Fiji's regulation is facilitated under its Pharmacy and Poisons Act, 1938, the Dangerous Drugs Act, 1938, Noxious Weeds, Posts and Disseases of Plants Act, 1965, the Ionising Radiation Act, 1969 and the Factories Act, 1971.

170. The relevant legislation in Hong Kong is the Dangerous Goods Ordinance, 1971, which enables the control of the use and transportation of these substances. This legislation is currently health and safety oriented but it will be extended to cover environmental qualities as well. It is indicated that the proposed Solid Waste Disposal Ordinance could also be used to regulate disposal of toxic wastes.

171. In India, the Central Insecticide Act, 1968 regulates the import, manufacture and sale of insecticides. The Prevention of Food Adulteration Act, 1954, and the Factories Act, 1948, provide certain controls over toxic substances. As with most other similar legislation in the region, these are health and safety oriented and environmental hazards have not been significantly considered. Radioactive substances are covered by the Indian Atomic Energy Act, 1962.

172. Indonesia's response is through a series of legislative provisions and administrative arrangements. Government Regulation No. 7 of 1973 provides the main basis of control over storage and use of pesticides while several Acts and Regulations passed between 1964 and 1975 deal with radioactive materials. No specific legislation on fertilizers and toxic substances are indicated.

173. The principal legislation in Japan includes the Agricultural Chemicals Act, 1948, the Toxic and Harmful Substances Act, 1950, the Basic Act on Atomic Energy, 1955, the Food Sanitation Act, 1947, and the Basic Act on Consumer Protection, 1968.

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174. In the Republic of Korea, the Environmental Preservation Law, 1977, supplements existing legislation on the subject.

175. Nepal reports that the use of agro-chemicals is so minimal that it has posed no environmental problem requiring a legislative response. Nepal also has no radiation environmental hazards.

176. In New Zealand, the Agricultural Chemical Act controls the registration, sale and use of agricultural chemicals; the Radiation Protection Act controls the manufacture, use and disposal of radioactive substances; toxic substances are regulated under the Poisons Act.

177. The Pakistan Agricultural Pesticide Ordinance, 1971, has provisions on pesticides. Registration of a product is allowed only after verification of claims and successful field trials for two crop seasons. Due consideration is given to environmental hazards. The Pakistan Atomic Energy Commission regulates the release of radioactive materials.

178. The proposed Environmental Contaminant Act of Papua New Guinea defines an "environmental contaminant" so as to include "any substance which causes an alteration of the environment so as to adversely affect its beneficial use". It is felt that this will cover all pesticides, fertilizers, toxic substances and radioactive materials.

179. The Philippine Environmental Code provides the statutory basis for regulating the use of pesticides, fertilizers, toxic substances and radioactive materials. The criteria for regulation here are environmental-oriented. Also, a comprehensive Act specifically dealing with agricultural chemicals is being drafted in the Philippines.

180. Fertilizer use is unregulated in Singapore. Not all pesticides are controlled. Only the more toxic ones are and these come under the Poisons Act. The main legislation on radioactive material is the Radiation Protection Act, 1973. Singapore's implementation of this legislation is premised on environmental considerations and it cites its ban on the use of chlorinated hydrocarbon insecticide to prevent pollution of the environment.

181. Sri Lanka has no specific legislation regarding pesticides, fertilizers and toxic substances. The use of radioactive material is governed by the Regulations of its Atomic Energy Authority.

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182. The Trust Territory of Pacific Islands adopted a pesticide regulation in 1977.

183. The Department of Environment in Iran has shown interest in a draft Act on Chemical Products Hazardous to the Living Environment.

184. The Radioactive Substances Act, 1968, and the Pesticides Act, 1974, make up the relevant legislation in Malaysia.

185. The Poisonous Substances Act, 1967, of Thailand controls insecticide and pesticide use, but the criteria are not of environmental import but are mostly to ensure product quality, health and safety.

186. Legislation in this field appears inadequate. With predominantly agricultural bases, most countries are freely using pesticides and fertilizers, sometimes in quantities excessive enough to cause dangerous concentrations in the natural ecosystem. Yet, their legislation has not responded to the need for environmental consideration in pesticide and fertilizer use. Instead, the dominant concern is the health and safety of the user. Remedial action would well serve the region's interests.

13. Cultural environment

187. Legislative interest in the area appears adequate but it is not clear how effectively national concern to protect culture, heritage, ancient monuments and archaeological sites is translated into concrete action. The legislations, however, is indicated:

(a) Australia: Australian Heritage Commission Act, 1975, and state legislations such as Victorian Conservation Trust Act, 1972, and Archaeological and Aboriginal Relics Preservation Act, 1972;

(b) Bangladesh: None indicated;

(c) Cook Islands: None indicated but there is intense encouragement to preserve traditional culture and historical traditional maraes,

(d) Fiji: None indicated;

(e) Hong Kong: Antiquities and Monuments Ordinance, 1971;

(f) India: Antiquities and Art Treasures Act, 1972, Delhi Urban Art Commission Act, 1973, and the Ancient Monument and Archaeological Sites and Ramains Act, 1958;

/(g)

(g) Indonesia: Monument Ordinance, 1931, supplemented by several administrative regulations;

(h) Japan: Protection of Natural and Historic Sites and Monuments;

(i) Nepal: Old Monuments Conservation Act;

(j) New Zealand: Artifacts/Antiquities Act, Historic Places Act;

(k) Pakistan: Antiquities Act, 1975;

(l) Papua New Guinea: National Cultural Property Act, and the proposed Conservation Act (the latter will have provisions inter alia on shipwrecks of historic merit);

(m) Philippines: Philippine Environmental Code and the Philippine Water Code;

(n) Republic of Korea: Preservation of Cultural Property Act;

(o) Singapore: Preservation of Monuments Act, 1971;

(p) Sri Lanka: Much legislation indicated;

(q) Thailand: Antiquities Act;

(r) Trust Territory of Pacific Islands: The Trust Territory Code covers provisions on "Historical Sites and Antiquities";

(s) USSR: Extensive policy but no legislation indicated.

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